Claims

1. (Original) A method of treating or preventing an infection in a subject who has been exposed to or is at risk for exposure to *Bacillus anthracis*, *Yersinia pestis*, *Variola major*, *Histoplasma capsulatum*, *Haemophilus influenzae*, *Escherichia coli*, *Shigella flexneri*, *S. dysenteriae* (*Shigella bacillus*), *Salmonella*, *Staphylococcus* enterotoxin B, Ebola virus, tick-borne encephalitis virus, botulinum toxin, ricin toxin, cobra venom, shellfish toxin, botulinum toxin, saxitoxin, ricin toxin, tricothecene mycotoxin, or aflatoxin, comprising administering to the subject a therapeutically effective amount of an immunostimulatory D oligodeoxynucleotide or an immunostimulatory K oligodeoxynucleotide, thereby treating or preventing the infection.

2. (Original) The method of claim 1, wherein the subject has been exposed to or is at risk for exposure to *Bacillus anthracis*.

3. (Original) The method of claim 1, wherein the subject has been exposed to or is at risk for exposure to Ebola virus.

4. (Original) The method of claim 1, wherein the subject has been exposed to or is at risk for exposure to tick-borne encephalitis virus.

5. (Canceled).

6. (Original) The method of claim 5, wherein the infection is anthrax.

7. (Original) The method of claim 1, wherein the oligodeoxynucleotide is at least about 16 nucleotides in length and comprises a sequence represented by the following formula:

$$5' X_1X_2X_3\ Pu_1\ Py_2\ CpG\ Pu_3\ Py_4\ X_4X_5X_6(W)_M\ (G)_N\text{-}3'$$

wherein the central CpG motif is unmethylated, Pu is a purine nucleotide, Py is a pyrimidine nucleotide, X and W are any nucleotide, M is any integer from 0 to 10, and N is any integer from 4 to 10.

8. (Original) The method of claim 7, wherein N is about 6.

9. (Original) The method of claim 7, wherein Pu_1 Py_2 CpG Pu_3 Py_4 are phosphodiester bases.

10. (Original) The method of claim 7, wherein $X_4X_5X_6(W)_M(G)_N$ comprises one or more phosphothioate bases.

11. (Original) The method of claim 7, wherein $X_1X_2X_3$ Pu Py and Pu Py $X_4X_5X_6$ are self complementary.

12. (Original) The method of claim 1, wherein the oligodeoxynucleotide comprises a sequence selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10, SEQ ID NO: 11, SEQ ID NO: 12, SEQ ID NO: 13, SEQ ID NO: 14, SEQ ID NO: 15, SEQ ID NO: 16, SEQ ID NO: 17, SEQ ID NO: 18, SEQ ID NO: 21, SEQ ID NO: 22, SEQ ID NO: 23, SEQ ID NO: 24, and SEQ ID NO: 25.

13. (Original) The method of claim 1, wherein the oligodeoxynucleotide comprises a sequence represented by the following formula:

5' $N_1N_2N_3$Q-CpG-W$N_4N_5N_6$ 3'

wherein the central CpG motif is unmethylated, Q is T, G or A, W is A or T, and N_1, N_2, N_3, N_4, N_5, and N_6 are any nucleotides.

14. (Original) The method of claim 13, wherein Q is a T.

15. (Original) The method of claim 1, wherein the oligodeoxynucleotide comprises a sequence selected from the group consisting of SEQ ID NO: 29, SEQ ID NO: 30, SEQ ID NO: 31, SEQ ID NO: 32, SEQ ID NO: 33, SEQ ID NO: 34, SEQ ID NO: 35, SEQ ID NO: 36, SEQ ID NO: 37, SEQ ID NO: 38, SEQ ID NO: 39, SEQ ID NO: 40, SEQ ID NO: 41, SEQ ID NO: 42, and SEQ ID NO: 43.

16-17. (Canceled).

18. (Previously Presented) The method of claim 1 further comprising administering to the subject a therapeutically effective amount of an anti-infective agent.

19. (Original) The method of claim 18, wherein the anti-infective agent is an antibiotic, an antiviral compound, an anti-fungal compound, or hyper-immune globulin.

20-36. (Canceled).

37. (Currently Amended) A method of enhancing the immunogenicity of a vaccine against ~~a bioterrorism agent~~ *Bacillus anthracis* in a subject, comprising administering to the subject a therapeutically effective amount of an oligodeoxynucleotide comprising the nucleic acid sequence set forth as SEQ ID NO: 200 ~~an immunostimulatory D oligodeoxynucleotide or an immunostimulatory K oligodeoxynucleotide~~ in combination with the vaccine, thereby enhancing the immunogenicity of the vaccine.

38. (Original) The method of claim 37, wherein the vaccine is an antigen vaccine, a DNA vaccine, a protein subunit vaccine, a peptide vaccine, an attenuated vaccine, or a heat-killed vaccine.

39. (Canceled)

40. (Original) The method of claim 37, wherein the vaccine is an antigen from *Bacillus anthracis*.

41. (Previously Presented) The method of claim 40, wherein the antigen is recombinant Protective Antigen or Protective Antigen.

42-49. (Canceled).

50. (Original) The method of claim 13, wherein Q is a T.

51. (Canceled).

52. (Original) The method of claim 37, wherein the oligodeoxynucleotide is administered before the vaccine is administered to the subject.

53. (Original) The method of claim 52, wherein the oligodeoxynucleotide is administered from about two weeks to about one day before the vaccine is administered to the subject.

54. (Original) The method of claim 37, wherein the oligodeoxynucleotide is administered to the subject concurrently with the vaccine.

55. (Original) The method of claim 37, wherein the oligodeoxynucleotide is administered after the vaccine is administered to the subject.

56. (Original) The method of claim 55, wherein the oligodeoxynucleotide is administered from about two weeks to about one day after the vaccine is administered to the subject.

57. (Currently Amended) A method of enhancing the immunogenicity of Anthrax Vaccine Adsorbed (AVA) ~~an anthrax~~ vaccine, comprising administering to ~~the~~ a subject a therapeutically effective amount of an oligodeoxynucleotide comprising the nucleotide sequence set forth as SEQ ID NO: 200 ~~an immunostimulatory D or K oligodeoxynucleotide~~ and a therapeutically effective amount of Anthrax Vaccine Adsorbed (AVA) ~~an anthrax~~ vaccine, thereby enhancing the immunogenicity of Anthrax Vaccine Adsorbed (AVA) ~~the~~ vaccine.

58-60. (Canceled).

61. (New) A method of enhancing the immunogenicity of a vaccine comprising anthrax protective antigen, comprising administering to a subject a therapeutically effective amount of an oligodeoxynuceotide comprising the nucleotide sequence set forth as SEQ ID NO: 200 and therapeutically effective amount of anthrax protective antigen, thereby enhancing the immunogenicity of the vaccine.

62. (New) The method of claim 57, wherein enhancing the immunogenicity of AVA comprises an increase in the IgG or IgM titer.

63. (New) The method of claim 57, wherein enhancing the immunogenicity of AVA comprises and increase in survival of the subject upon subsequent exposure to anthrax.

64. (New) The method of claim 37, wherein the vaccine is Anthrax Vaccine Adsorbed (AVA).